APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,458	02/23/2004	Hans Henrik Bostrom	CISCO-8384	8563

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EXAMINER
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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/785,458	BOSTROM ET AL.
		Examiner	Art Unit	
		Ankit P. Gandhi	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after t he mailing date of this com munication, even if timely filed, may re duce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2007*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Response to Arguments

1.   Applicant's arguments filed 11/13/2007 have been fully considered but they are not

persuasive. See the detailed discussion below.

Applicant argues on page 7 that according to the cited drawings; the connections are

clearly not end to end, but rather, end at the edge, which is specifically what is excluded in the

claims. However, Examiner respectfully disagrees. Further, Examiner wants to point regarding

claim 1 and 15, which are silent and does not comprises any structure of how end-to-end

transmission takes places from the first computer to second computer in order to prevent

connection at the inbound edge of the computer network. During patent examination, in view of

Ishwar, wherein disclosed figure(s) of Ishwar establishes a logical port connection within a

network node (from service provider A) that includes a binding to a tunnel, associating the

logical port with a VLAN and transmits traffic through network node (figure 13, 14) to the port

of second service provider B as shown, via logical port, which is created at SPED A that includes

a binding to a physical port and to a target stacked VLAN tunnel, and then the logical port can be

used in defining the broadcast domain (is a logical network segment in which any computer or

other device connected to the network can directly transmit to any other on the domain, provided

that they are share the same subnet address and are in the same VLAN) of a VLAN and

forwarding traffic. Therefore, Examiner has given the broadest reasonable interpretation, because

upon binding of ports and created VLAN tunnel from edge device of site A to site B, packets are

implicitly delivered from one device (located behind the edge device of site A and site B) to

another without terminating the connection at the edge of the computer network (SPED A to

SPED B). The claim rejection under *35 USC § 102* sustained.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section
122(b), by another filed in the United States before the invention by the applicant for
patent or (2) a patent granted on an application for patent by another filed in the United
States before the invention by the applicant for patent, except that an international
application filed under the treaty defined in section 351(a) shall have the effects for
purposes of this subsection of an application filed in the United States only if the
international application designated the United States and was published under Article
21(2) of such treaty in the English language.

2.   Claims 1-8, 12-22, 26-29 are rejected under 35 U.S.C. 102(e) as being anticipated by

Ishwar et. al., Pub. No.: US 2004/0017816, (hereinafter referred as, Ishwar).

Regarding claims 1 and 15, Ishwar discloses a method of providing data transmission

across a computer network (figure 8, column 4, paragraph 0045, line 5, L2 MPLS tunneling

through Ethernet-based network) the method comprising:

creating a plurality of tunnels (figure 8, Multiprotocol label switching tunnel 808) across

a computer network to connect a first computer (via service provider edge device A to VLANs,

802, figure 8) to a second computer (via service provider edge device B to VLANs, 804, figure

8)

the plurality of tunnels (multiprotocol label switching tunnel 808) including a tunnel for

each link in a link aggregation (column 4, paragraph 0047, lines 1-10) of a plurality of

transmission protocols (supports MPLS protocols family such as LDP, CR-LDP, RSVP-TE and

network node, which can be implemented as a service provide edge device supports STP and

LACP protocols, column 7, paragraph 0062, lines 11-12);

connecting a first computer (via service provider edge device A to VLANs, 802, figure 8)

at a first site (figure 8, C1 and C2, on 802) with a second computer (via service provider edge

device B to VLANs, 804, figure 8) at a second site (figure 8, C1 and C2, on 804); the connection

made via the computer network (column 4, paragraph 0045, line 1);

and transmitting packets (figure 8, lines 6-9, transmitting traffic from port P_3 of SPED A

to port P_4 of SPED B) end-to-end from the first computer to the second computer in a manner

characterized that the computer network preserves a connection from the first computer to the

second computer without terminating the connection at the inbound edge of the computer

network, the packets conforming to protocols in the plurality of transmission protocols. (figure

13, process flow diagram of managing VLAN traffic in a network node, wherein such system

establishes a logical port within a network node that includes a *binding* to a *tunnel*, associating

the logical port with a VLAN and transmit traffic through network node, *therefore* such system

inherently preserves a connection from the first computer site to second computer site due to

packet transmission binding with a logical port and VLAN, which is created at SPED A that

includes a binding to a physical port and to a target stacked VLAN tunnel, and then the logical

port can be used in defining the broadcast domain (is a logical network segment in which any

computer or other device connected to the network can directly transmit to any other on the

domain, provided that they are share the same subnet address and are in the same VLAN) of a

VLAN and forwarding traffic. Thus, upon binding of ports and created VLAN tunnel from edge

device of site A to site B, packets are implicitly delivered from one device (located behind the

edge device of site A and site B) to another without terminating the connection at the edge of the

computer network (SPED A to SPED B).

Regarding claims 2 and 16, Ishwar discloses the method of claim 1, wherein the plurality

of transmission protocols comprises LACP protocol, and packets are transmitted in accordance

with the LACP protocol to perform Ethernet loadsharing across multiple links (column 7, lines

11-12).

Regarding claims 3 and 17, Ishwar discloses the method of claim 1, wherein the plurality

of transmission protocols comprises PAgP protocol, and packets are transmitted in accordance

with the PAgP protocol to perform Ethernet loadsharing across multiple links (as, it is well

known to one skilled in art that when port aggregation is provided between switches, it is also

called "link aggregation" and "multilink trunking").

Regarding claims 4 and 18, Ishwar discloses the method of claim 1, wherein the plurality

of transmission protocols comprises UDLD protocol (column 4, paragraph 0045, lines 11-17,

static Label switching protocol) , and packets are transmitted in accordance with the UDLD

protocol to perform unidirectional link detection (wherein, the static LSP is a unidirectional

entity that runs from SPED A to SPED B, as disclosed in figure 8).

Regarding claims 5 and 19, Ishwar discloses the method of claim 1, wherein a unique ISP access VLAN is assigned to each connection between corresponding Etherchannel ports (as disclosed in figure 3, unique VLAN 100 for location C1 and unique VLAN 200 for location C2).

Regarding claims 6 and 20, Ishwar discloses the method of claim 1, further comprising monitoring the computer network to detect multipoint protocol tunneling (as figure 14 disclosed managing VLAN traffic in a network node, step 1402-1412, wherein step 1410, the logical port is used to identify the tunnel, *VLAN* or *MPLS tunnel*, column 6, paragraph 0058, line 10)

Regarding claims 7-8, and 21-22, Ishwar discloses the method of claim 6, wherein the monitoring is performed on a per-interface basis (wherein, destination MAC address has been learned, the packed is forwarded to logical port, and searching for exit port table lookup is the MPLS tunnel in which the packet is forwarded, column 5, paragraph 0049, lines 12-14 and lines 16-18).

Regarding claims 12 and 26, Ishwar discloses the method of claim 6, wherein a report is generated upon detection of multipoint protocol tunneling (column 7, paragraph 0064, wherein port engine for multipoint protocol can be configured in a combination of software and hardware, so such system should inherently to be viewable or to be able to generate report for port list/changes and selection.)

Regarding claims 13 and 27, Ishwar discloses the method of claim 6, wherein multipoint protocol tunneling detection is performed on a per-protocol basis (column 4, paragraph 0043).

Regarding claims 14 and 28, Ishwar discloses the method of claim 6, wherein multipoint protocol tunneling detection is performed on a per-port basis (refer to figure 6A, and column 4, paragraph 0042).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

4.   Claims 9-11 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ishwar et. al., Pub. No.: US 2004/0017816, (hereinafter referred as, Ishwar) in view of Kalkunte

et. al., Pub. No.: US 2002/0012345, (hereinafter referred as, Kalkunte).

Regarding claims 9 and 23, Ishwar teaches the all the limitation mentioned above.

However Ishwar fails to teach, an aging time is set to a minimum time that is longer than a

longest expected transmission time for the transmitted protocol data unit.

Kalkunte discloses a method of handling data packets in a series of network switches,

furthermore Kalkunte teaches a method; wherein static bit is set to dynamic address learning;

which identifies that the entry is learnt dynamically and purged by the aging process using age

timer (column 8, paragraph 0150).

Therefore, it would have been obvious to one skill in the art at the time invention was

made to imply logic of Kalkunte in the system of Ishwar; wherein aging timer can be set to

minimum time in comparison of longest transmission time for packet arriving via tunneling

network from customer site A to customer site B. One is motivated to do so because if packet

takes longer transmission time from site A to B then pre-defined usual transmission, then entry is

purged out by the aging process in order not to cause bottleneck, usage of higher bandwidth and

higher packet error/drop out ratio.

Regarding claims 10 and 24, Ishwar teaches the all the limitation mentioned above.

However Ishwar fails to teach, that all packets arriving with a source media access control

address other than the reference are dropped.

Kalkunte teaches the same limitation as claimed above. Furthermore, Kalkunte teaches a

method; wherein whenever the source address is matched with the entry in the address resolution

(ARL) table, the Hit bit is set. This bit is used in making decision to purge the ARL entry.

(Column 8, paragraph 0155)

Therefore, it would have been obvious to one skill in the art at the time invention was

made to imply logic of Kalkunte in the system of Ishwar; because during transmission bit is

assigned to each packet with respect to source media access control address using ARL table,

and if packet arrives without having hit bit set to it, then aging process purge out the entry. One

is motivated to do so because, using tunneling network, this technique can block inappropriate

packet data can be dropped ahead of time in order to protect the secured VLAN tunneling

network and processing time.

Regarding claim 11 and 25, Ishwar teaches all the limitation mentioned above. However, Ishwar fails to teach, that after expiration of the aging timer provides its source MAC address as the next multipoint protocol tunneling reference.

Kalkunte teaches the same limitation as claimed in claims above. Furthermore, Kalkunte teaches if a new MAC address has to be learnt and if ARL table is full, then random non-static entry can be picked up.

Therefore, it would have been obvious to one skill in the art at the time invention was made to imply logic of Kalkunte in the system of Ishwar; because once the aging timer is expired and packet arrives with new source MAC address with hit bit; random non-static entry can be picked up and packet is proceed to move to next multipoint protocol tunneling reference for further processing.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ankit P. Gandhi whose telephone number is 571-270-3009. The examiner can normally be reached on Monday-Friday - 9:00 to 5:00 (Altern: Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

APG

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER